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ABSTRACT

This paper examines conceptual issues and research evidence related to the effects of day care on infants. Examples of cultural relativism in child development are used as the basis for arguing that there is no fixed list of parental behaviors that can be counted on to meet children's psychological needs. American cultural values and the resultant parental attitudes toward child rearing are examined and five areas of parental concern about day care are probed: (1) dilution of emotional attachment of infant to mother, (2) retardation in cognitive development, (3) failure to train child in effective control of anger, aggression, and passivity, (4) Potentially polluting influence of other children, and (5) middle class mother's perception of herself as the effective socializing agent. Several studies examining the effects of day care are reviewed and it is concluded that among children from reasonably supportive families, group care programs that contain experiential variety administered by an involved staff do not seem to affect the children's cognitive or social development in an obvious way. Speculations are presented on why the family retains its dominant influence on the child's development in spite of the significant amount of time the child spends in group care. Finally, policy implications related to the role of the Federal Government in regulating day care are presented. Five aspects of the day care setting identified as needing regulation are: (1) staff/child ratio, (2) space, (3) age of admission, (4) characteristics of personnel, and (5) risks. (JMB)

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THE EFFECT OF DAY CARE ON THE INFANT

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The concern among Americans with the psychological consequences of day care for infants is based on two related assumptions. The first is that the early experiences of the child have a profound effect on intellectual development that may remain stable for years. The second is that the love relation between infant and mother provides the child with an emotional security that will protect him against future psychological distress. If both of these assumptions were valid apprehension about early group care would be reasonable. However, the empirical data behind these assumptions is not strong and it is not possible at the present time to make strong statements about the potential danger of infant day care.

Moreover, it must be appreciated that the positive or negative effects of a particular form of child care depend on the psychological qualities that facilitate adaptation in the older child and adult. For example, if the ability to accept dominance by peers was an adaptive trait in our society (it is not) and if the day care environment promoted that quality more effectively than the home, the day care environment would be better for children.

The Western mind is friendly to four prejudices regarding the development of the child. The first premise is that each day the child is being seriously influenced by the actions of others, and that the relation between these social experiences (say, spanking

the child for stealing money) and his future behavioral, motivational, and moral development is absolute, fixed, and knowable. The second assumption is that development consists of a series of discrete stages, each with its own unique pattern of characteristics, catalyzed by a special alchemy between maturation and experience. "Now you see it, now you don't" captures this metaphor for growth. The third notion, a corollary of the second, is that successful passage through one developmental stage makes passage through the next easier. Contrariwise, failure to master all the necessary tasks of one stage impedes movement to the next higher one, as if development were like rising through successive Boy Scout ranks rather than an intercontinental sea journey. The final premise, which is at once the most profound and most controversial, is that there is an ideal, best adult, and, correspondingly, a best collection of experiences that maximizes the probability that the ideal adult will emerge from the cacophony of childhood encounters. In simpler terms, most American parents believe in the existence of a small set of psychological traits that are necessarily correlated with a maximally happy adulthood. If parents and teachers praise, punish, and posture at the right time and with the proper enthusiasm - like the conducting of a major symphony - they would create the perfect adult. This paper questions this

last idea by suggesting that there are several reasonable answers to the query, "What are a child's psychological requirements?". The substance of each of the answers depends, first, on one's views concerning the nature of the human child and the mechanisms that mediate his growth, and, second, on the subtle messages the larger society communicates to parents regarding the kinds of adults that are needed for the succeeding generation.

The most popular contemporary American conception of the young child is that he is an inherently helpless, dependent organism prepared by nature to establish a strong emotional bond with the adults who care for him. If these adults attend to his drives and desires with consistency and affection, it is assured he will gradually learn to trust them, be motivated to adopt their values, and develop such a sturdy concept of self that he will possess a vital capacity for love and will be able to deal with conflict, anxiety, and frustration effectively. The traditional Japanese mother, prior to the Western acculturation of her attitudes, viewed her young infant through different lenses. He was neither helpless nor dependent, but a willful, asocial creature destined to move away from people unless she could tame him and deflect his natural instincts. Hence, she usually soothed and quieted her infant, suppressing the excitement that the American mother tried to arouse. The Indian

mother in the highlands of Guatemala believes that infants are born with different dispositions depending upon the day of their birth. She is convinced there is little she can do to change these fixed developmental directions, and her fatalism leads her to stand aside so that her child can grow as nature intended (Kagan, 1972). Most children in all three communities grow up equally adapted to their societies. Moreover, there is such a remarkable similarity among the ten-year-olds in each of these settings that one is forced to question the validity of these local theories.

Too many parents are absolutistic in their view of psychological growth, assuming that all children should be headed for the same ideal telos and require a best combination of psychological nourishment to complete the long and difficult journey. Contrast this view of the infant, which is predominant in the United States, with the more relativistic notion that a child's psychological requirements not only change with his stage of development, but also become, with age, increasingly dependent upon the local culture. Lest this statement sound too general, consider a concrete illustration. In contemporary America, a willingness to defend intrusions into one's space and property and acceptance of the affect of anger and the motive of hostility are regarded as necessary for taming each day. Hence, it is generally acknowledged that the family should not always punish mild displays of anger or aggression in or out of the home. A parent who never permitted the child any expression of hostility would be called bad names by the majority of American

psychologists, psychiatrists, pediatricians, and social workers.

Among the Utku of Hudson Bay, who are restricted for nine months a year to a tight 300 feet of living space, it is necessary that any sign of anger, hostility and aggression be consistently suppressed. A good mother conscientiously starts to train this inhibition as early as 24 months of age by ignoring acts of defiance and, by age nine, the behavioral indexes of anger, so common in American children, are not in evidence (Briggs, 1970). An Eskimo mother who allowed her child easy displays of aggression would be called the same bad names we apply to the American mother who did not permit this behavior. And the Eskimo 10-year-old is as well adjusted to his community as his American counterpart. But if the Eskimo and American children exchanged locales, each would quickly develop the symptoms psychiatrists call neurotic. Each would have brought to his new home a set of dispositions inappropriate to the standards of that residential space.

Freda Rebelsky has noted that during the first ten months of life infants in the eastern part of Holland are held only when they are being fed. At other times, they lie tightly bound in basinettes that are placed in small rooms isolated from the more dynamic parts of the house. They have no toys, no mobiles, minimal stimulation, and the amount and variety of adult contact is far less than that encountered by the average American infant. Yet, by age 5, these middle class Dutch children do not

seem to be different from 5-year-old Americans. Indian infants living in the isolated highlands of Guatemala are held by adults over 6 hours a day, in contrast to the 60 minutes of maternal carrying characteristic of American homes. Yet, at age 10, there is no evidence of major differences in fundamental intellectual competence or affective vitality between Indian and American children.

Since these are not uniquely exotic examples of relativism in child development, it is reasonable to repeat the earlier question, "What do children need?", when food and protection from excessive disease and physical discomfort are guaranteed. We wish to take a strong stand on this issue by suggesting that children do not require any specific actions from adults in order to develop optimally. There is no good evidence to indicate that children must have a certain amount or schedule of cuddling, kissing, spanking, holding or deprivation of privileges in order to become gratified and productive adults. The child does have some psychological needs, but there is no fixed list of parental behaviors that can be counted on to fill these critical requirements.

Psychologists must develop an appreciation for the message it took biologists so long to learn; namely, that environmental niches are neither good nor bad in any absolute sense. Rather, they are appropriate or inappropriate for a specific species;

hence, an organism's requirements can never be separated from the environment in which it grows. Frogs actualize themselves in a New England forest, not in the Mojave Desert; lizards have the opposite profile of ecological requirements. To ask what a child needs is to pose half a question. We must always specify the demands the community will make upon the adolescent and young adult. Since we are primarily concerned with the problems of psychological growth in this society, we will take America as the context of development, although it is hoped that some of the presumptuous statements to be made have some generality beyond North America.

An American child must believe, first of all, that he is valued by his parents and a few special people in his community (usually a teacher or two, but often older peers, uncles, aunts and coaches). Since our society makes personal competence synonymous with virtue, the sculpting of a particular talent, or better yet, talents, is usually a necessary but not sufficient requirement for the development of a sense of worth. Obviously it is only possible to list the appropriate set of competences to be attained if one knows the domains of mastery that the community values. In rural Guatemalan villages the ability to care for young children with efficiency and skill produces this feeling of worth in preadolescent girls. In the United States, it is more closely tied to quality of performance in junior high school. Hence, competence

in academic subjects is a sine qua non for the American child. It is difficult, if not impossible, to fail this requirement completely and still retain a sense of dignity and worth in adulthood.

The American child must also develop autonomy, the belief that he or she is able and desires to make decisions regarding his conduct and his future, independent of coercive pressures from parents, teachers, and friends. The recent increase in drug use among American youth threatens older Americans not because of an automatic revulsion toward pills or smoking, but because it is believed that marijuana and heroin destroy the desire to be independent and autonomous. In a culture in which the majority of 25-year-olds do not live within visiting distance of the family and friends with whom intense childhood intimacies were shared, it can be argued that it is adaptive for autonomy to be promoted so conscientiously. There is another reason why autonomy has become such a precious characteristic. A society's typical mode of livelihood--its economy--always exerts some influence on the psychological characteristics it extols. There is greater independence, autonomy, and permissiveness toward aggression among African tribes in which pastoralism dominates the economy than among tribal groups in the same country where agriculture is the main source of income (Edgerton, 1971). The reasonableness of this correlation derives from the fact that a 12-year-old boy who is given daily responsibility for 50 head of cattle must make a series of independent decisions

that do not arise for a 12-year-old who helps his father plow a field or plant maize. Moreover, personal disputes are less disruptive in a pastoral setting, where the disputants can easily put miles between them, than in a fixed agricultural village where actors are totally captive in a small area, and feuds, therefore, must be suppressed.

Most Americans earn and increase their livelihood by perfecting talents that an institution wants. We have an economy in which services and skills are offered for payment. Unlike modern Japan, where each worker has a primary lifetime loyalty to the company for which he works (Nakane, 1972), the unwritten understanding in the United States is that primary loyalty is not awarded to the institution (be it company, university, or governmental agency) but to the self. (I assure it is understood that the writer is not condoning this arrangement, but merely describing it). If financial gain is to be maximized, young adults must be socialized to make decisions that are best for them. Hence, most parents unconsciously encourage their children to decide conflicts for themselves. The parental admonition to a 15-year-old, "You will have to decide whether you want to go to the movies or save your allowance," which is so rare outside of the western community, is part of the daily preparation for adulthood. Parents are probably unaware of the hidden message in these communications, but their effect is measurable, nonetheless.

nally, and here we are more similar to other cultures, America requires the young adult to be heterosexually successful; to be able to love and be loved and to take pleasure from sexual experience. As a result we promote a permissive attitude toward sexuality.

These attributes comprise the core of America's current ego ideal. There is much to celebrate in this list, but also much to mourn. There is, in our opinion, insufficient emphasis on intimacy and too much on self interest; insufficient emphasis on cooperation and too much on competitiveness; insufficient emphasis on altruism and too much on narcissism. But we cannot alter this catechism by shaking our heads and pulling at our chins. These values derive, in part, from the form of our economy, our densely crowded, impersonal cities, and the fact that our educational institutions function as 12-16 year selection sites for tomorrow's doctors, teachers, lawyers, administrators, scientists and business executives. These basic structures will have to change a little if we want our values to reflect more humanism. Put succinctly, the fact that Bobby Fisher's flagrant narcissism was excusable because he beat Boris Spassky for the chess championship suggests that the only thing more important to Americans than character is individual success.

Since it is not likely that our economy, our cities and

our institutions will change dramatically during the next decade -- perhaps they will over a longer period -- American parents will probably not alter their tendency to encourage the values and associated competences listed above; namely, academic success, autonomy, independence, and a permissive emotional attitude toward hostility and sexuality. However, at another time--perhaps 25 years hence--they might easily be persuaded to promote a different creed.

Parental concerns about day care

Let us now consider some of the prejudices American mothers have about day care. Despite the preliminary evidence that group care outside the home does not seem to have an obviously negative impact on infants, many American mothers are honestly concerned about the effects of such care on their children. The disquiet is maintained by five notes of uncertainty--the possible dilution of the emotional attachment of infant to mother; retardation in cognitive development; failure to train the child in the effective control of anger, aggression and passivity; the potentially polluting influence of other children; and, finally, the middle class mother's perception of herself as the effective socializing agent. Let us consider the bases for each of these sources of apprehension.

The attachment of infant to mother.

The concept of attachment is relatively new in our theorizing about child development but it has an important connotation that was missing from earlier theoretical discussions. The traditional interpretation of the close emotional relation between an infant and the mother assumed that the relationship was due to a conditioning of positive reward value to the mother. The explanation was usually stated in the following way. Any new stimulus that is associated with a reward (food, warmth, or a pleasant feeling state) acquires reward value itself. Through such conditioning, the mother, as a stimulus, comes to signify pleasure and contentment in much the same way that the buzzer became a sign of food for Pavlov's dogs. The infant learns that to approach this source of pleasure will lead to effective gratification of his needs with minimal delay. The child learns the important response of looking for and approaching his mother when he is hungry.

According to the principle of stimulus generalization, a response learned to one stimulus is likely to occur to stimuli similar to the original one. Other sources of pain and discomfort, (such as injury, cold, and illness), are sufficiently similar to the pain of hunger that the child should make the same response he made when hungry, that is, the child who approaches his mother when hungry should also approach her for nurturance (gratification of needs) when he is in pain and discomfort for other reasons. Further, because the mother is similar to other people, the infant should, in varying degrees, generalize his approach response to other people. In brief, the initial feeding situation was regarded as the basis

for learning whether the mother is rewarding, and whether approaching the mother -- and, by generalization, other people -- leads to gratification.

If the initial feeding experience was not rewarding because the mother was tense, held her baby in an awkward manner, force-fed him, or handled him roughly, the child would experience some pain in association with the stimulus of the mother and the sensations of hunger. If the painful stimuli occurred frequently enough and over a long period of time, the stimulus would acquire a negative or anxiety-arousing value and she would become symbolic of discomfort rather than of pleasure. As an organism's innate reaction to discomfort and pain is withdrawal and avoidance, the infant would learn to avoid rather than to approach the mother. Moreover, the infant would not learn that approaching people in a state of discomfort might lead to gratification of his motives. Another infant, for whom the feeding experience had been predominantly pleasant, will be more likely to look to others for gratification of his needs.

The results of several important experiments have complicated this simple social learning view. One of the most important series of studies was conducted by Professor Harry Harlow and his colleagues at the University of Wisconsin. Harlow placed infant monkeys with "mother" monkeys that were constructed of wire mesh. Some of these infants were fed from a bottle attached to the "chest" of a plain wire-mesh mother. Others were similarly "fed" by a wire-mesh mother that differed in just one respect from the other mother -- it was covered by terry cloth. When the monkeys were given the choice of going to either mother, the animals characteristically

chose the terry-cloth mother and spent more time clinging to her than to the plain wire-mesh mother. This was also true for infant monkeys fed only from the wire mother, never from the terry-cloth mother. The infant would go to the wire mother only when hungry, feed until satisfied, and then return to the terry-cloth mother for most of the day.

Because the discomfort associated with hunger is alleviated by the wire but not by the terry-cloth mother, traditional learning theory would predict that the wire mother who supplies the food should be the most rewarding stimulus and, therefore, the one with whom the monkey should spend the most time. The fact that this prediction is incorrect forces us to reassess our basic hypothesis about the events that lead an infant to become related to another figure.

Further, when a fear-provoking stimulus (a large wooden model of a spider) was placed in the cage, the infant monkey ran to the terry-cloth mother rather than to the wire-mesh mother. The terry-cloth mother was also more effective in reducing the young monkey's fear than the wire mother. When the terry-cloth mother was present, the young monkey was more likely to venture out to explore the fear-arousing stimulus. When the young animal was with the wire-mesh mother, he was more fearful and was less likely to explore the open space around the strange and "threatening" object.

A series of related studies stimulated by Harlow's original work suggest the following conclusions. If the young monkey is to develop normally, he must have some interaction with an object to which he can cling during the opening months of life. Another monkey is best, but a terry-cloth surrogate allows the infant to cling

and is, therefore, better than the wire surrogate. The clinging response is natural to the monkey, as perhaps scanning and vocalizing are to human infants. In time of stress the monkey runs to the object to which he normally clings. For example, if two chimpanzees are placed in a strange situation, they show increased clinging to each other, as if the clinging reduced fear or distress. As the chimpanzees become familiar with the originally strange situation, the mutual clinging decreases. There seems to be a strong similarity between this behavior in the chimpanzee or the monkey and that of a 1-year-old human child who runs to his mother and hides his face in her skirts if a strange person enters the house or an unexpected noise is heard.

Let us consider another example of a close infant-mother relationship before we come to some conclusions. Ethologists have found that if a newly hatched duck first follows a strange object, such as a moving yellow circle or a human being, rather than its mother, it will continue to follow this object for some time. This phenomenon has been called imprinting. As with Harlow's terry-cloth-reared monkeys we might say that the duck becomes attached to the object, even though it does not alleviate or reduce pain, hunger, or discomfort in any way. In the case of the duck there does not even have to be any tactile contact between it and the object it follows. How can we explain these phenomena?

One explanation is that each species is provided with a special set of responses that it can emit at birth or soon afterwards. The infant will display these "complex reflexes" in response to the

most appropriate stimuli the environment supplies. The objects that elicit these responses are likely to become objects of attachment for the young animal.

In the natural environment of the jungle the young monkey clings to the hairy undersurface of his mother for several months after birth. Nature has supplied the infant monkey with a strong grasping reflex and the monkey becomes attached to those objects that allow him to display this response. The mother is the most effective stimulus for this reaction. The duck or chicken upon hatching typically follows a moving object and under natural conditions the biological mother will be the first moving object the young bird encounters. The chicken becomes attached to the mother because the mother allows the natural response of following to occur.

What of the human infant? What are its naturally strong reactions? The infant smiles, sucks, babbles, cries, scans, manipulates, and holds, among other things. In the natural course of events the mother is usually the stimulus that is the target for these responses. The mother talks and stimulates the baby to babble; the mother moves her face and stimulates the child to scan it; the mother allows the baby to play with her hair and permits the manipulative responses to appear. More important the mother alleviates the child's hunger, cold, and pain, and while she is performing these caretaking acts, the infant is studying her face and form, babbling and, occasionally, smiling.

As a result of the daily repetition of these interactions and the infant's behavioral responses to this caretaking, he gradually

constructs a well-articulated schema of the mother and any other person who cares for him frequently. Hence, by the time he is 4 or 5 months old, he has differentiated his caretaker from others and now will not allow just anyone to pick him up when he cries, rock him when he is sleepy, or feed him when he is hungry. Only a few special people have earned that privilege. Now the infant is more likely to approach, smile, and play with these caretakers and less likely to be apprehensive and inhibited with them than with other adults. It is during this period of development, from about 2 to 24 months, that the term infant attachment has a useful meaning.

A definition of attachment. We shall use the term attachment to refer to the infant's tendency during the first 24 months to approach particular people, to be maximally receptive to being cared for by these people, and to be least afraid when with these people. The primary objects of the child's attachment have the greatest power to placate him and to protect him from fear when he experiences a strange event or is in an unfamiliar situation.

The attachment of infancy is different from the symbolic love relation that exists between a 3- or 4-year-old and his parents. When a child uses symbols consistently, sometime after age 2, he knows which adults "value him" and he wants to maintain an emotionally close relation to these people. It is possible for a 4-year-old child, who did not see his father until he was 3 years old, to believe that his father values him and to have a close relation with

the father. This emotional bond can probably develop without a prior attachment during infancy. Moreover, the fact that an infant is attached to his mother during the first two years does not necessarily mean that when he is 4 years old he will be dependent on, secure with, or even emotionally close to her. Imagine two 5-year-olds who had been closely attached to their mothers during infancy. If one mother encouraged and rewarded dependence on her while the other encouraged and rewarded independence from her, it is likely that the former child would more frequently run to his mother in time of stress than the latter, even though both had been equally attached to their mothers as infants. When we say that a 5-year-old is emotionally close to his mother, we are describing a symbolic love relationship that depends on the child's perception of the degree to which his parents value him. That symbolic evaluation may take precedence over the nonsymbolic attachment of the first year. In rural Guatemala, for example, Indian infants are with their mothers continually for most of the first two years and, by our earlier definition, are closely attached. But the preadolescent boys in these villages are hostile to their mothers, relatively independent of them, and do not seek them out in time of distress.

Dr. John Bowlby has a slightly different view of the meaning of attachment. Bowlby believes that the goal of the child's attachment behaviors is to keep him close to his mother. When the infant or young child is too far from his parent, both partners become activated to do something until the distance between them is

less and the child is again close to his caretaker. Our view is that if the 1-year-old is attached, he will tend to make any one of a number of approach responses toward his mother whenever stress occurs. If he is already near to her, he may display another reaction. For example, if a 1-year-old was holding onto his mother and saw a large animal or felt a painful cramp, he would probably look at his mother or squeeze her hand tightly. The "attachment behavior" is not elicited by the perception of being physically distant from the parent, but rather by any source of uncertainty, fear, or distress.

The gradual differentiation of people into the familiar ones who are targets of attachment (the ones from whom he accepts care, approaches for play, and with whom he feels less afraid) and all others is a product, in part, of the establishment of a schema for his adult caretakers. When that schema is finally articulated, the infant will detect the difference between the familiar caretakers and others and will become afraid of those who are unfamiliar.

Relation of attachment to socialization. It is widely believed that effective socialization and maintenance of the child's emotional security depend on the continual nourishing of a strong, affective bond between infant and mother or primary

caretaker. If the relation is broken regularly for long periods during the day, the child's attachment to his caretaker is presumably weakened and the two goals become more difficult to attain.

Effective socialization supposedly requires that the child be dependent on and have a strong emotional relation to the parent. If not, the mother will not be able to use the relationship to persuade the child of the importance of adopting parental standards. Dilution of the child's attachment to the mother raises the spectre of a disobedient, aggressive, academically retarded child who has spurned the values his parents cherish.

The emphasis on the attachment of infant to mother derives, in part, from psychoanalytic theory and partly from the highly publicized reports of Harlow's animal experiments. A key essay, from the perspective of developmental psychology, was written by Rene Spitz during the 1940s. Spitz visited some poor orphanages in South America where infants, who were not regularly attended by the adult staff, were extremely apathetic and displayed high rates of morbidity. Spitz concluded that the lack of attachment to a specific adult caretaker was the reason for their anomalous development. He ignored the lack of variety in their life space, the lack of opportunity to practice maturing competences, and their poor physical health.

Malnourished Guatemalan Indian infants living in isolated villages display a similar apathy and high rate of morbidity and mortality--40 percent of the children die during the first two years. But these infants are rarely out of their mothers' sight and are nursed on demand. Their inattention and illness seem due to poor nutrition, frequent infection, and lack of experiential variety. Among these infants, a close attachment to the mother did not protect them from passivity and temporary cognitive and motor retardation. By contrast, kibbutz reared 2 year olds, who spend 20 of 24 hours in an infant house away from their mothers, are alert, lively and very healthy. Spitz appears to have arrived at his interpretation a little too hastily.

Psychologists have been selective in the evidence used to support the claim that the infant-mother relation should be minimally broken during the first year. They pointed to the poorer school performance and more frequent asocial behavior of lower class children whose mothers were forced to work, in order to support the family But they ignored the smaller number of professional mothers who left their young infants with responsible surrogate caretakers in the home because there was no evidence to indicate that the development of this group was anomalous.

Developmental psychologists greeted John Bowlby's long essays on attachment with applause and initiated studies relating separation anxiety, as an index of intensity of attachment, to the salience of the mother's presence in the infant's life. Since separation protest does not appear until the last half of the first year, due to maturational factors controlling cognitive functioning, it was concluded that it took about eight months for an attachment to develop. The few studies that found middle class children showing separation protest earlier than working class children (Kagan, 1970) were interpreted as indicating that middle class infants had a closer attachment to their mothers. This finding served to strengthen the original premise for many believed that middle class women were better mothers. And middle class children were, of course, superior at culturally valued skills. Thus the evidence and assumptions seemed to form a coherent whole.

However, this theory of the infant years is not shared by parents in many parts of the world, nor was it the view of parents of earlier eras. Many middle class mothers in 18th and early 19th century France brought their young infants to live with wet nurses in a poor part of the city or an outlying village for a year or more. If these mothers thought this experience was psychologically debilitating they would not have made that decision. Unfortunately, the health conditions in the homes of many of the wet nurses were less than satisfactory and by the late 19th century, when the high rates of morbidity and mortality became

public, the practice of boarding one's infant with a wet nurse declined in popularity. But the abandoning of wet nurses reflected a concern with physical illness, not with anomalous psychological development.

Why then is the supposition that infants and mothers must remain together for the opening years so strong in current American thought? Industrialization placed men in factories, shops and offices, and left women at home with no garden to hoe, no berries to pick, no cows to milk, and no cloth to weave. Forced to remain at home it was natural that the mother would be receptive to investing her affect in the activities of the home and the culture cooperated by celebrating the sacredness of the maternal function. The central principle of dissonance theory states that if one must perform certain activities, the mind quickly exaggerates the value of those actions. Hence 19th century pediatricians and educators stressed the importance of the mother's attentive nurturance toward her child and the child's emotional tie to her. As urbanization and mobility increased in scope, it became more likely that the average child in the late 19th century middle class family would have only his mother--no grandparents or sister-in-laws--to seek out when he was in distress. Thus it would be reasonable for adults and scientists to conclude that the child would be uncertain about the presence of his mother and, when older, of her devotion to him. It is only a small step from this social fact to Freud's suggestion that the major source of anxiety in the infant is the possibility

of losing the mother, Bowlby's essay on attachment, and Ainsworth's research on the relation of separation protest to quality of the mother-child relation.

Despite the intuitive appeal of these ideas, there is no firm evidence indicating that daily separation from the mother seriously dilutes the infant's attachment to the parent nor any firm evidence that a close relation protects the child from later psychic trauma. However, given the combination of ambiguous evidence, the culture's affection for the centrality of the child-mother bond and the dominant psychological theory of the century, it should not be surprising that most mothers would worry about sending their infants to a day care center. Although their apprehension may be legitimate, it gains its validity from intuition, not evidence.

Retardation of cognitive development. A second node of concern is the belief that the infant requires special interactions with the parent if intellectural development is to proceed optimally. The factual basis for this supposition is a bit sturdier. Infants in environments that contain minimal variety are a little late in displaying the major developmental milestones, when compared with those raised in environments with a great deal of variety and opportunity for practicing emerging competences. Interaction with adults is an extremely rich source of the varied experiences required for optimal intellectual growth and social responsiveness. In poorly run, understaffed institutions for infants, an adult caretaker is responsible for 10 or more infants, there are few toys, and the children are likely to be confined to cribs and unable to

explore their world. The adults do not conceive of themselves as stimulating psychological growth through play and interaction, but see their role as primarily caring for the infant's basic biological needs of hunger, warmth, and cleanliness. Children growing up in such settings are less vocal, less socially responsive, retarded in language, and less alert to changes around them.

During the early 1940s Rene Spitz observed the behavior of young children who spent their first year in institutions where care was inadequate and inconsistent. During the second half of the first year, 15 percent of the infants began to develop an unusual sequence of behavior. At first they cried continually, but after several months the crying subsided and they began to become indifferent to adults. "The children would lie or sit with wide open, expressionless eyes, frozen, immobile face, and a far away expression as if in a daze, apparently not perceiving what went on in their environment." (It is of more than incidental interest that Harlow's juvenile monkeys who were raised on wire surrogate mothers are described in a way that is similar to Spitz's earlier descriptions of the institutionalized infants.)

Some of these children may have been physically ill, either suffering from serious malnutrition or chronic infectious diseases. However, these observations alerted many psychologists and psychiatrists to the possible psychological consequences of institutional living, and better-controlled studies have corroborated the conclusion that institutionalized babies are markedly different from those raised in families.

Provence and Lipton observed 75 babies living in an institutional environment in the United States where nutrition and bodily

care were adequate and the infants were not physically ill, but where interactive play and opportunity to explore were inadequate. The description of the institutional environment will help the reader appreciate the conditions under which these infants lived.

> The younger group of infants (age 4 days to 8 months) occupied cribs placed singularly in glass partioned cubicles. The room was clean, cheerful and light with adequate heat and ventilation. The infants were fed in their cribs with bottles propped. When cereals, fruits and vegetables were added to the diet they were also given in a propped bottle with a large holed nipple rather than given by spoon....Sometimes a stuffed toy was placed in the crib for the baby to look at. After about 4 months of age, simple rattles, beads and so on, were placed on a string suspended across the crib sides and the single playpen which contained other age appropriate toys....Each infant in this group shared the time and attention of the attendant with 7 to 9 other infants in the same age range for the 8 hour period of the day when she was present. For the remaining 16 hours of the day, there was no person in the nursery except at feeding time when an attendant who also had similar duties in other nurseries heated formulas, propped bottles, and changed diapers (Provence & Lipton, 1962).

Not only were the infants fed without the presence of an adult, but there was minimal variability in their experience. There were no vocalizations from other people, no reciprocal play, no close relationship between a child's crying and the reaction of someone else.

In considering how these babies were different from those raised in families it should be noted, first, that there were no major differences between normal and institutionalized babies prior to 3 or 4 months of age. It is only after 4 months that the differences became evident. The institutionalized babies vocalized very little; they showed no cooing, no babbling, and little crying. Moreover, they did not adapt their postures to the arms of an adult, "they felt something like sawdust dolls; they moved, they bent easily at the proper joints, but they felt stiff or wooden."

These infants were not picked up very often and, therefore, one would not expect them to make the kinds of postural adjustments that babies ordinarily make. By 8 months of age most of these infants were markedly less interested in grasping or approaching toys, and they began to lose interest in their external environment. During the second half of the first year, body rocking became very common and was more frequent than would be observed among family-reared babies. Stranger anxiety was rare, and the infants' facial expressions were bland and clearly not so expressive as those of family-reared infants. If they were frustrated, they would cry passively or turn away; rarely would they make an attempt to conquer a frustration. Finally, language was delayed. There were no words at all at 1 year of age and vocalization and language were the behaviors that were most seriously depressed. The following is a description of one of these babies at 45 weeks of age.

> Outstanding were his soberness, his forlorn appearance, and lack of animation. The interest that he showed in the toys was mainly for holding, inspecting and rarely mouthing. When

> he was unhappy he now had a cry that sounded neither demanding nor angry -- just miserable -- and it was usually accompanied by his beginning to rock. The capacity for protest which he had earlier was much diminished. He did not turn to adults to relieve his distress or to involve them in a playful or pleasurable interchange. He made no demands. The active approach to the world, which had been one of the happier aspects of his earlier development, vanished. As one made active and persistent efforts at a social interchange he became somewhat more responsive, animated and motorically active, but lapsed into his depressed and energy-less appearance when the adult became less active with him (Provence & Lipton, 1962).

There were two descriptive comments by observers that seemed to convey the impression Teddy made at this time: one was, "the light in Teddy has gone out"; the other was, "if you crank his motor you can get him to go a little; he can't start on his own."

All of the behaviors that were most likely to be learned as a result of interaction with an adult (clinging, crying to distress, approaching adults for play, and vocalization) were most clearly retarded or absent in the institutionalized children.

Observations in Indian villages in Guatemala, where infants are continually with their mothers and are nursed regularly, reveal the same kind of listless, apathetic infants. This fact suggests that the absence of a single, consistent caretaker is not the critical factor that produces the listlessness and apathy. What then does produce the apparent intellectual retardation?

In both the American institution and the Indian village the child experienced little variety in cognitive and affective experience and had little opportunity to explore the environment, and practice the responses that come so naturally to infants -- reaching, manipulating, crawling, and creeping. Moreover, in both contexts attractive toys were absent and there was very little conversation between the adults and infants. Hence, it is likely that the critical factor porducing the nonalertness and apparent retardation is lack of variety in experience and the restricted opportunity for exploration and action during the first year.

This conclusion is supported by a study of retardation in institutionalized children in two types of institutions in Iran. In the first, called the deprived setting, the child was never placed on his stomach and hence could not practice creeping. He was not held in a sitting position while being fed and had no toys with which to play. In addition, only 1 attendant was provided for every 8 children, so that interpersonal contacts of any sort were severly limited. In the second institution, called the enriched setting, the child was often placed on his stomach, was held while eating, had toys and playthings, and in general received considerably greater attention. In this latter setting, 1 attendant was provided for every 3 children (Dennis, 1960).

The children in both settings typically entered the institution shortly after birth. During the second year of life, the behavior of the 50 children in the deprived setting was compared with the behavior of the 20 children in the enriched setting. While only 42 percent of the deprived children could sit alone,

90 percent of the enriched children could do so. Less than 5 percent of the deprived group could stand or walk while holding on to a support, while over 60 percent of the other children could perform these responses. Finally, no child in the deprived institution could walk alone, while 3 of the 20 children in the enriched setting were able to do so.

The lack of opportunity to learn the motor acts of sitting and walking in the deprived setting was primarily responsible for the observed behavioral retardation of children in this group. The deprived children were not allowed to practice creeping or sitting and, consequently, were retarded in these responses. The deprived children also showed more head-shaking and repetitive rocking of the body and appeared more unhappy than the enriched children.

Although the instituional environment is monotonous, it does contain physical stimulation. Some psychologists have suggested that lower-class children from so-called deprived environments do not have enough sensory stimulation and, as a result, are retarded mentally. Compare the quiet bedroom of a suburban middle-class home in the country with an urban one-room ghetto apartment. If one measured the amount of stimulation in physical terms, the environment of the city child would contain much more stimulus energy than that of the middle-class infant. But the middle-class infant lives in a stimulus environment that is highly variable and distinctive. Moreover, the infant attends to and learns most from distinctive stimulation -- stimuli that attract his attention. A mother's voice breaking the quiet of the bedroom and addressed directly to the infant when he is alert has the maximal probability of attracting

the young infant's attention and, therefore, of teaching him something. A voice yelling over a television set in a sea of noise is less distinctive and is less likely to recruit the infant's attention.

The importance of distinctiveness of stimulation is illustrated in the observations of lower- and upper-middle-class mothers of 4-month-old girls. When the upper-middle-class mothers vocalized to their infants, they were likely to be face-to-face with them and not providing any other stimulation. They were not tickling them, touching them, or patting them. The mother's vocalization to the infant was very distinctive. The lower-class mother was apt to talk to her infant when she was feeding, diapering, or burping the baby. As a result, the vocalization was less distinctive, for the infant may have been attending to the tactile or kinesthetic stimuli that accompanied the diapering or burping. It is probably more than coincidence that the upper-middle-class girl produces more variable sounds and shows precocious language development during the first two years of life (Kagan, 1971).

It is helpful to take a relativistic view of the stimulus events that occur during the first year. The issue is not the amount of sensory stimulation the infant receives, but its variety and distinctiveness, that is, its quality rather than quantity. Infants who have greater experiential variety are more alert and perform better on tests of cognitive functioning than infants with minimal variety.

Since adequate intellectual development is such a vital quality for success in modern America, parents would wonder if surrogate care could provide the experiences required for normal development. Some commentators

have treated day care environments as if they were institutions. Since many institutionally reared infants are retarded in cognitive functioning, the parental fears were not without basis. Moreover, firstborns usually speak earlier and attain higher IQ scores and better grades than later borns, at least within middle class American families. Since firstborns receive more parental interaction than later borns, it is reasonable to assume that the extra minutes of mother-child encounter were responsible for the intellectual advantage. Indeed, Zajonc has suggested that with each extra child added to a family the amount of interaction each child receives is diluted by some fixed amount and his intellectual potential impaired.

American parents are deeply concerned with the intellectual development of their children. Indeed, intelligence is regarded as if it were a primary psychological organ. The requirements for entrance into all major status-awarding institutions consist primarily of mental examinations and past intellectual performance. There is no assessment of physical prowess, religious attitudes, or emotional stability, although there is some acknowledgement of the relevance of honesty and character as revealed through letters of recommendation. But the Army Alpha, Scholastic Achievement Test, and the Graduate Record and medical and law examinations are purely cognitive in content. This practice announces the culture's assumption that if one is intellligent, it is likely one will make technically correct and morally appropriate

decisions in any position of trust and responsibility.

This prejudice is reminiscent of Plato's conviction that a person possessing correct knowledge cannot help but make morally proper choices. It is also reflected in the writings of the decade following the Revolutionary War when Robert Coram, Noah Webster and others wrote that education was the best prophalaxis against despotism. If a person knew the law he would obey it. Salvation, too, was dependent on proper tutoring for no one could appreciate the principles of Christianity without proper education. Thus the ignorant were likely to be full of vice and susceptible to the devil's temptations. A half century ago we regarded mentally retarded people as moral defectives for a weak intellect made a child vulnerable to impulsive and morally devious actions. In the years after the Civil War it was assumed that vice and corruptibility were a product of ignorance and that education and knowledge could alleviate these stains.

Americans value rational intelligence because they believe that opinions and beliefs are culturally determined. We have been taught to be tolerant of other people's beliefs because they are the product of the vicissitudes of experience. Intelligence is supposed to be the product of biology and experience and is therefore a more profound reflection of each person's essence.

Most Americans believe that unequal amounts of intelligence contribute to differential power, wealth and virtue. Hence of all the qualities a child possesses, many contemporary American parents worry about the integrity of their child's mind. There is less concern with physical appearance, vigor, health -- even happiness. The amount of shame or pride shown by an American middle class mother to a body blemish or a happy disposition is small when compared to the emotion felt when a parent suspects her child is intellectually behind or a genius. We have placed a special stigmata on any impairment of intellect because access to power in the West requires education and education requires intelligence. Hence early signs of intellectual impairment, no matter how mild, conjure up images of hobos and ditchdiggers doomed to spend their lives with shovel and pick.

Since most American parents believe that the experiences of the early years of life are the catalysts that act on the biological substrate the child brings into the world, it is natural that they would want to guarantee that their child had the very best set of early encounters. If day care were not as stimulating and accelerating of cognitive development as home rearing, then the child's future might be seriously harmed.

The teaching of control of impulse. Since anger, tantrums, aggression, dependence and passivity are viewed as dispositions that the young child acquires easily, but gives up with reluctance, learning to control these behaviors must begin during the early years. The mother sees her task as teaching the child to inhibit these reactions. She believes this task requires continued supervision so that psychological or physical punishment can be applied at the time the forbidden act occurs, and she plans to use her emotional relation to the child to insure that he eventually tames those villains. The mother is not sure that the hired caretaker will be as conscientious as she in punishing the unpredictable acts at the right time and is afraid that the child will not be as willing to curb his impulses for the caretaker as he will be for her. Hence group care has the risk of leading her child down the road to ruin.

There are some anecdotal bases for this prejudice. Group care environments in the United States are noisier and wilder places than living rooms. There is more pushing and snatching of toys in a day care center with twenty 2- and 3-year olds than in an apartment with two children. Further, many day care staff, trained in a philosophy of permissiveness toward aggression and emotional spontaneity are reluctant to punish every misdemeanor. Staff also tend to protect the helpless and passive child and do not make special efforts to demand autonomy and independence from a 2 year old who is excessively shy or clinging. The day care teacher in modern America, in contrast to the People's Republic of China or the iron curtain countries, is generally tolerant of a wide range of behavior in young children and is not unduly concerned with

bringing all the children under her care up to some ideal criterion. The parent with an articulated ideal and coherent philosophy of child rearing might be anxious about such a loose attitude toward socialization and, as a result, view the day care environment as dangerously indifferent.

The polluting effect of peers. Many parents believe the child is vulnerable to the influences of other children -- monkey see, monkey do. Each child is a potential model for her own to copy. If other mothers are not as conscientious as she in the training of good habits her child may be tempted to adopt the unwanted qualities he sees in his peers. Socialization is difficult enough without the extra burden of worrying about other children undoing her efforts at home. The fear that other children, especially those from less advantaged class and ethnic groups, have polluting power, is not new. In the 19th century, Jacob Abbott warned mothers to keep their sons and daughters away from other children, especially lower class children, because they might learn bad habits from these youngsters. The strong emotion that surrounds desegregation and busing reflects the worry that incorrectly socialized children will infect the good ones with bad ideas and provide incentives for undesirable behavior.

The mother as the responsible agent. A final reason for resistance to day care comes from the middle class mother's conception of herself as the effective agent in monitoring the growth of her child. She is afraid that trusting the child's experiences to the unmonitored behavior of hired workers might bring harmful results.

A basic controversy surrounding the selection of constructs to describe or explain individual development concerns where to place responsibility for action, affect and thought. Each society and each individual walk a tightrope between assigning responsibility to self or to outside forces. Although the Greeks awarded the gods the power to control major catastrophes they retained some islands of sovereignty for man to influence. And even the gods were not in complete control for fate placed some constraints on their potency. Psychological theories vary in the proportion of variance each assigns to the executive processes of self versus the lawful or stochastic events in the space outside the sphere of conscious volition. Psychoanalytic theory divided the territory into id and ego. The former was beyond control, while part of ego was free to effect the future. The person was not responsible for the consequences of acts and emotions that were derivatives of the unconscious, only those initiated by the conscious ego.

Behaviorism, especially in the extreme form suggested by Skinner, has generated much emotion because of the suggestion that each of us is tied to our surroundings by iron chains that pull at us in ways that we cannot control, as if each of us were one of the small motor cars on an electrified metal floor one finds at carnivals. Genetic theories of psychopathology or intelligence are threatening to many citizens because they relegate to an unseen biological force the processes we wish to believe are free. It is probably not a coincidence that biologically based theories which promote a fatalistic view typically blossom following periods of social unrest. John Pelzel has suggested that following the

fall of the Han civilization in ancient China the normally rational and controlled Chinese drifted toward the magical qualities of Taoism. Such a view also appeared soon after our Civil War and has emerged again several decades after the socially destructive events that began with the rise of the Third Reich and ended with Vietnam, Watergate and civil and racial strife. Such a dense parade of major attacks on the culture's values cannot help but persuade many that they are not in control of their lives and that forces which they cannot effect are determining their daily experience. That mood, which has become increasingly common in the West, has produced books like "Chance and Necessity," "Helplessness," and movies like "A Tall Blonde Man with One Black Shoe," a film which made chance the director of a set of experiences that a young musician believed were a function of his own talents.

Each person makes a judgment about the degree to which he is in control of the major events in his life, based in large measure but not totally, on his contruction of reality. If major consequences that affect one's daily life are beyond one's control -- court ordered busing, earthquakes, influenza epidemics, rampant vandalism, irresponsibility in government -- then one has no choice but to award power to impersonal forces outside the self's tiny circle of activity. As a result, each feels less potent. As social conditions stabilize, strategies of coping with realistic threats have a chance of becoming organized and the self is likely to take back what it gave away under duress. The less powerful and less wealthy in most societies are more likely to ascribe

power to outside forces than those who are more privileged. The Middle East belief in possession by spirits is typically restricted to the lower classes and occurs far less often among those with wealth and prestige. Children from less affluent and less well educated families are more likely to attribute their failure in school to biological incompetence, the prejudice of the teacher, or unfair tests than to motivation and persistence. Brim and his colleagues found that the belief that intelligence is inherited, rather than responsive to effort, is much more firmly held by lower than by middle class adolescents.

The middle class mother still sees herself as in control of her child's development and she is reluctant to let that control slip into the hands of others. This may be one of the most important sources of resistance to group care for the young child.

Each of these five issues has produced legitimate apprehension over group care for infants and young children. Indeed, these themes are so intimately woven into the fabric of the culture's belief system that one of the authors, firmly convinced of the legitimacy of each of those concerns, spoke out strongly against day care for infants only a few short years ago.

Review of research on the effect of form of care.

Recently investigators have studied the effects of arrangements of rearing, other than the nuclear family, on the child's growth. These arrangements include day care and residential group care in institutions. Although this literature is fragile in quality, the initial impression most have taken from this work is that group care does not seem to have much of an effect, either facilitating or debilitating, on cognitive development for most children. The one exception to that statement seems to hold for children from poorly educated and less privileged families. If these children attend special centers they tend to perform better on the standard tests of development during the first few years of life than if they had been raised totally at home. However, the group context must be a good one. Let us consider some of the exemplary studies that support this generalization on the effect of rearing conditions on early development.

One of the earliest studies (see Barrett & Koch, 1930) of the value of group care found that 3 to 5 year olds from poor families gained 20 points on the Merrill-Palmer test of development after only six months of attendance in a group care setting compared with 5 points for controls.

In the more contemporary literature Bettye Caldwell and her colleagues enrolled a small group of children in a day care center attached to Syracuse University. The children, who came from both black and white as well as working and middle class families,

were enrolled at different times between 5 and 22 months of age. They remained in group care for a period that ranged from 2 through 4 years. When these children were preschool age a control group of children matched with the day care group on sex, race and age was located and both groups were enrolled in a new center. The children were observed and rated when they were roughly between 3 and 4 3/4 years of age. There were no differences between the 19 children who had been in group care for over two years and the 19 control children who had just recently enrolled in group care with respect to sociability with peers, cognitive functioning, or attitudes toward the teacher. The ratings hinted that the children who had been in day care for the longer period were less cooperative with adults, slightly more aggressive and more active (see Schwarz, Strickland & Krolick, 1974; Caldwell, Wright, Honig & Tannenbaum, 1970). An earlier report on this sample (Caldwell, et al., 1970) reported no differences in degree of attachment of infant to mother as assessed from interview data.

Lally (1974) has been studying a group of low income families and their children who are enrolled in a program involving parental advice and support as well as day care. The children from 6 to 15 months attend a special center for a half day; from 24 to 60 months they participate in a full day program. The Stanford-Binet--as well as other tests--have been administered at 3 and 4 years of age to this experimental sample as well as two control groups--one matched on social class and one from better educated families.

The experimental children have higher IQs than the lower class controls at both ages (although the difference is smaller at age 4 than at age 3). However, the middle class children have the highest scores. The difference between the average 4 year IQ of the middle class sample (IQ of 138) and that of the experimentals attending the special day care program (IQ of 110) is much larger than the difference between the day care and lower class controls (IQs of 110 and 102 respectively). Hence social class is the more important determinant of IQ--a result in accord with other studies. But it should be noted that the children participating in the experimental intervention had higher IQs than the lower class controls.

One of the most extensive assessments of the effects of day care --either group or family care--on the behavior of preschool children was summarized by Lippman and Grote (1974). The samples were relatively large and predominantly Caucasian. The main analysis compared 66 triplets of children matched on sex, race, number of parents in the ho and maternal education. One of these groups attended a group day care center for a minimum of 9 months prior to assessment and an average of two years. The second group attended family day care for about the same length of time, and a third group was reared at home. A large battery of tests was administered to the children assessing variables like curiosity, relation to parents, sex typing, achievement, impulse control, and cooperation. The data revealed minimal differences among the three groups on most of the measures. Children in day care were not different from home controls in cooperativeness, preference to be with parents in time of stress, recall memory, or sex typing. One of

the few differences that emerged implied that day care children were a little more realistic than home controls in estimating their abilities--the home controls tended to overestimate their cognitive skills. But the main thrust of the results is contained in the authors' concluding section.

"Although no claim can be made to have obtained valid measures of all the aspects of development, the overwhelming similarity of the 4 year olds in the three settings on most task measures and by our subjective evaluation, would suggest that we need to reevaluate some of our unbased cliches about the influence of day care on development." (Lippman & Grote, 1974, p. 290.)

Vroegh (1976) came to the same conclusion after comparing 114 children 12 to 36 months of age who attended either a day care center or were cared for in another woman's home for most of the day. Ratings of the children by either day care teachers or the women who were responsible for the children in their homes revealed no important differences between the behavior of the two groups.

"For the most part, the data presented here do not indicate that there are negative effects on typical infants enrolled in typical day care experiences in our country. When the length of time in day care at the time of testing is controlled, it appears that there are generally no differences in the social-emotional development, cognitive development, or physical development between children who have been in day care 9 months or less and children who have been in day care one year to 18 months." (Vroegh, 1976, page 6).

"Generally there were no differences in this study between the children who were in home day care and those children who were in center day care. The few differences that did occur were easily explained. Likeability distinguished the Home care infants from the center care infants. Home day care "mothers" are in a better position to have transferred children whom they have little liking for. Center teachers do not as easily have that option. Superior gross motor ability and less withdrawal behavior distinguished the center care children from the home care infants. In the center there were more opportunities for gross motor practice and for teachers to observe such behavior. Also in the center the children have more experiences with a variety of people (volunteers, observers, other teachers, etc.) than do home care children. They are more likely to approach others.

This study seems to support the earlier studies that indicated no harmful effects of day care on the social, emotional, and cognitive development of infants. Because the conclusions of this study were based on data from children who were in day care situations typical of the care many children experience while their parents work, it appears that there is more solid ground for stating that day care does not appear to harm infant development." (Vroegh, 1976)

Kohen-Raz (1968) compared the Bayley scores of Israeli infants being raised either in kibbutzim, middle class homes, or institutions in Israel. There were no differences in DQ between the kibbutz and home reared children but the institutionalized children obtained lower scores than the other groups. Hence group care was not the significant variable. Rather it was the experiences associated with group care that were critical.

Collard (1971) found that institutionalized infants, 8 1/2 to 13 months of age, were less exploratory with toys than lower middle class or middle class children being reared at home. Raph and her colleagues (Raph, Thomas, Chess & Korn, 1968) compared three groups of children--those who had attended a nursery and kindergarten for about three years, a second group that only attended kindergarten for a year, and a third group with no group care experience. Observations of the children revealed no differences in sociability, quality, or style of interaction with peers or teachers among the children who had

differing amounts of group experience. Hence extended experience with other children in a group care setting does not necessarily influence subsequent patterns of sociality with peers. This finding implies that there is no simple relation between frequency of encounter with peers and specific behavioral consequences. If one performed an analysis of those responses that were reinforced and punished in the group and home care settings it is likely that the pattern of reinforcements and punishments would have been different for the two groups of children. Hence a simple mechanistic view of the influence of the determinants of social behavior would have predicted differences among the children in Raph's study. The fact that they did not occur implies that the problem is much more complicated.

One of the few reports that implied a potentially harmful effect of day care (Blehar, 1974) contained a sufficient number of soft spots to warrant a cautious attitude toward the author's conclusions. Blehar compared ten 30 month old children who had been in day care for four months with an equal number of 30 month old children reared at home, and ten 39 month old children who

had been in day care for about four months with an equal number of children who had been reared at home. The assessment situation was the Ainsworth strange person situation designed to assess reaction to departure of the mother. The older children in day care (the 39 month olds) were more likely to cry and search for their mother than their home controls but this difference was not significant among the younger children. In addition to the small sample size, the study is marred by the fact that children were only in day care for four to five months before being assessed--a relatively short time--and 80 percent of the children in day care were firstborns in contrast to only 60 percent of the home controls. Fox has shown that firstborns are more likely to cry in a separation situation than later borns. Hence it is possible that the differences Blehar reported are confounded with differences in ordinal position.

The potential fragility of the Blehar result is affirmed by a more recent study, similar in design, which did not replicate Blehar's data (Beth-Doyle, in press). Beth-Doyle compared 12 children (age range 6 to 30 months) who had attended a day care center for about seven months with 12 matched controls who had been reared at home. One of the assessment situations was Ainsworth's strange situation. The day care children did not cry or seek proximity to the mother any more frequently than the home controls, thus contradicting Blehar's suggestion that day care can produce emotional insecurity in the child. Indeed, very few of the children in either group showed avoidance of the mother upon reunion. Beth-Doyle suggests that perhaps one

reason for the difference between her finding and Blehar's is the fact that the ratio of child to staff was 4 to 1 in Beth-Doyle's group but 6 or 8 to 1 in Blehar's study.

In a later unpublished paper Beth-Doyle compared three groups of children--those attending day care, those reared at home, and those being cared for outside the home by a mother surrogate, like a grandmother or babysitter. There are 11 children in each of these three matched groups and the average time in the group day care setting was about 4 1/2 months. The childrenranged in age from about 6 to 25 months at the beginning of the study with an average age of about 18 months. There were no significant differences among the groups in Cattell's IQ scores or in language development. Moreover, there were no differences among the three groups in behavior in the Ainsworth separation anxiety situation. Indeed, the children being reared at home cried more than the two nonhome reared groups under the condition when they were left alone--a result that is inconsistent with Blehar's hypothesis that children who attend group care are more insecure when separated from their mothers because of a diluted attachment (see Beth-Doyle, June, 1975). Hence, among middle class families day care experience does not seem to have a noticeable effect on cognitive and affective development. But there is some indication that it may be enhancing of growth among lower class children.

A similar study (Winett, Fuchs, Moffatt & Nerviano, unpublished) studied the cognitive performance of children 3 to 5 1/2 years of age who had spent the last nine months or longer either in a day care center (n = 35),with a babysitter (n = 15), at home (n = 43), or in mixed settings with a sitter and/or in a day care center (n = 31). The children in the latter group were from higher social class families than the other three, which were of equivalent class background. The children were administered the Peabody, parts of the ITPA, and a special preschool cognitive battery. There were no differences among the three groups from similar social class backgrounds exposed to different forms of rearing. However, the children from the better educated families in the "mixed group" attained higher scores on all three tests. Therefore it appears that social class background and its associated home experiences rather than the form of supplementary rearing have the greatest influence on cognitive development.

Robinson and Robinson (1971) compared 16 children enrolled in group care during either infancy or age 2 with 16 children who were matched on sex, race, and social class who had not been in group care. All children were tested between 2 1/2 and 4 1/2 years

of age with Bayley and Stanford-Binet tests. At age 4 there were no important differences between the group care and home control middle class children. But the black day care children, who tended to come from economically deprived families, attained higher scores that the black children being reared at home from lower social class families. Hence children reared in environments where the language skills and strategies tapped by the IQ tests are not encouraged seem to be helped by the practices of the middle class group care environment.

This finding is nicely replicated in a crosscultural study by Leiderman and Leiderman,(1974). The subjects were 67 Kikuyu infants, many of who were cared for by older sisters, friends or relatives for a large part of the day. Following home observations the children were classified as being in predominantly monomatric, mixed, or predominantly polymatric homes. This classification was based on the percent of time that the mother was the principal caretaker, as assessed from the home observations. In the monomatric group the mother was principal caretaker more than 75 percent of the time; for the polymatric group the mother was principal caretaker less than half the time. The children were administered the Bayley Infant Scale of Development at two intervals. Children's families were divided into social class levels based on amount of land, livestock, and source of income. The important result, and one we shall refer to later in this report, is that the lowest Bayley developmental quotients occurred among the monomatric reared children from the poorer homes. The average DQ of these children

was 84 on the mental and 89 on the motor scale, while the other groups achieved scores close to or over 100. There were no differences in DQ associated with either monomatric or polymatric rearing for children of the wealthier families. The authors suggested that the infants from poorer families who were being raised primarily by their mothers did not experience as much variety as those reared in the poorer home with several caretakers. Observations of the home settings revealed that polymatrically reared infants from poorer families did experience more frequent social interaction than those reared monomatrically (21 percent versus 8 percent) due to the interaction provided by the substitute caretakers. As in the Raph study, if the child is from an environment that is ordinarily restrictive of opportunity and variety it appears that the extra variety that comes from multiple caretakers tends to facilitate cognitive development. Hence the relationship between variety of experience and cognitive development is not continuous but behaves very much more like a threshold function. As we shall see in the main body of this report, the working class Chinese children reared at home, who may have encountered the least variety of experience, was the only group to show cognitive gains as a function of attendance at the day care center--a finding in accord with the Leiderman data.

Kohen-Raz (1968) also assessed the differences between children reared in traditional nuclear families (n = 152) with those reared in infant houses on kibbutzim (n = 130) and infants being raised in Israeli institutions (n = 79). The range of ages was from 1 to 27 months. Most infants from the kibbutz and home groups came from

better educated parents--all had completed high school and most had university degrees. Five different women administered the Bayley Scales to the children and the data were grouped into four age categories: 1 to 4 months, 5 to 7 months, 8 to 12 months, 15 to 27 months. Although the mental scores of the kibbutz children were higher than American norms, we are primarily interested in the intergroup comparisons among the three Israeli samples. There were no consistent differences between the children being reared in the Kibbutz and the private homes. At 6 months the kibbutz children had a higher score than the home reared, but at no other age was this true. By contrast, the institutionalized children had lower scores at nine ages, from 3 through 27 months. Similarly, on the motor scale there was no kibbutz-home difference and the institutionalized children again obtained lower scores prior to 15 months. After 15 months the scores were not significantly inferior to kibbutz or home control children. As is true of the data we shall summarize, despite the apparent difference in experience in an infant house and a nuclear family (amount of contact with mother and other children) the rate of attainment of the basic milestones of infancy and early childhood does not seem to be influenced by the difference in environmental experience. It is the environment of the institution that seems to be disadvantageous. Although Kohen-Raz did not collect observations in the three settings it is reasonable to suggest that variety of experience and opportunity to practice maturing competences are the critical events that were absent in the institution but present in both the kibbutz and nuclear family settings.

One of the best studies of this genre (see Tizard, Cooperman, Joseph & Tizard, 1972) followed children living in different long-term residential nurseries in England, most of whom (about 70 percent) had been enrolled as infants. Observations of the children and the settings, as well as test scores gathered when the children were between 2 and 5 years of age, revealed that the language comprehension scores of children in the group settings were not significantly different from the norms gathered on home reared English children. Most important, the children in nurseries that were well organized and where staff stimulated the children linguistically attained better language comprehension scores than children in the nurseries where staff engaged in much less verbal interaction with the children. This is one of the few instances in which one finds covariation between the relevant environmental experience in a group setting and a relevant outcome variable. In this case the more the staff used language with the children and encouraged their language comprehension the better the child's language comprehension score. It must be noted, however, that spontaneous expression of language did not covary with the quality of the nursery. The difference associated with good and bad nurseries also holds for good and bad adoptive homes (Beckwith,1971). A group of 24 children were placed in adoptive homes early in life, between five and ten days old, and assessed twice during the first year with the Cattell, the Gesell and observational data. The greater the variety of experience in the home the higher the Cattell Developmental Quotient. Children who experienced minimal verbal and physical

interaction and who were restricted in their opportunity to practice maturing competences--based on observations--attained the lowest scores.

The power of a therapeutic institution to enhance cognitive development is nicely demonstrated in a study of 132 children who were admitted into a therapeutic milieu when they were between 2 and 8 years of age. Those whose initial IQ was under 80 and had remained in the institution at least one year gained over 20 points on the Stanford-Binet. However, regardless of initial IQ level the 23 children who stayed over 14 months in the institution gained an average of 15 IQ points (Gavrin & Sachs, 1963).

The young child's tendency to grow toward health, if it is possible, is seen in a study by Ramey, Campbell and Nicholson, (1973). A group of 24 children who were admitted to day care at about 3 1/2 months were given the Bayley at 6, 12, and 16 months and the Stanford-Binet at 24 and 36 months. Most of the children who scored lower on developmental quotient at 6 months gained in score and approached normative values. Those with high scores at 6 months remained high throughout the end of the first year. Hence, as with the results reported by Willerman, et al., (1970), retardation in infancy is only predictive of later retardation if the child remains in the initial environment that did not encourage cognitive growth. Transfer to a nonfamilial environment that is conducive to growth seems to facilitate intellectual development.

Although, as indicated earlier, the informational base is still weak the better controlled studies imply that among young children from reasonably supportive families group care programs that contain experiential variety administered by an involved staff do not seem to affect the child's cognitive or social development in an obvious way. The presence of multiple caretakers, many children, and their potential for providing different patterns of encounter do not appear to be of significant import for the cognitive and social criteria assessed in these studies. Either these criteria measures are too crude to detect real differences among the groups--a real possibility--the wrong variables are being assessed or, indeed, there are minimal or even trivial differences between children who have experienced good group care and those reared at home.

If it is difficult to demonstrate dramatic effects of certain forms of rearing on contemporary behavior, it is even less likely that differences in early forms forms of rearing will affect future psychological functioning.

We are not the first to raise a skeptical eye toward the hypothesis that specific experiences during infancy have profound effects on the cognitive, social and motivational profile of later childhood. Over 25 years ago, Orlansky reviewed much of what was known about the relation between infant experience and later personality functioning (with a 149 item bibliography). He concluded,

"This paper reviews some of the empirical data bearing on the

theory that various features of infant care determine adult personality. Our conclusion has been largely negative and we have been led to substitute a theory which emphasizes instead the importance of constitutional factors and of the total cultural situation." (Orlansky, 1949, p. 42)

Fifteen years later, Caldwell (1964) and Yarrow (1964) took similar assignments. Caldwell reviewed the recent work on the effect of infant care on development and Yarrow studied reports on the effects of separation from parents. Each was forced to conclude that the existing data did not provide much support for the view that certain experiences in infancy constrained the future in a fixed way. Caldwell suggested that parental attitude was more important than specific parental behaviors and that social class differences are always demonstrable, while correlations between specific practices and outcomes in the child are more difficult to find.

Yarrow's summary statement was similar in tone.

"On the whole the data do not differentiate clearly between the effects of the separation experience per se and the reinforcing conditions following separation.... With regard to the separation experience itself, the potentially traumatic effects of the event can be reduced. For the young infant, the strangeness and the unpredictability of the environment associated with varied changes may be as significant as the loss of the mother figure." (Yarrow, 1964, p. 127-129).

More recently, Herzog and Sudia (1973) reviewed the literature on the incidence of juvenile delinquency, school achievement, and sex role identity among boys growing up in a home without a father. The authors concluded that the evidence did not permit any firm conclusions regarding the relation between these phenomena and absence of the father. (Herzog & Sudia, 1973.)

Forty years ago, Wayne Dennis (Dennis, 1938) published observations of twin girls who were raised from birth to seven months of age in relative isolation. "Normal behavior development can occur in some infants when most of the first year is spent under conditions of minimum social stimulation and a very restricted practice. In other words, a large number of acts on the part of the adult which have been held by some people to be of importance may be dispensed with. (Dennis, 1938, p. 156).

Nevertheless the belief that experiences during the first year have a profound influence on later development is too strongly held

by many Americans to be cast aside on the basis of evidence alone. What is needed is a different theory of early development. Most American parents are devoted to their infants and want them to be happy and successful. They realize this prize is not easily won and, hence, are uncertain and anxious about the child's future. The uncertainty is tempered if the parents believe in the efficacy of a set of actions they can initiate with the child. The ritual actions that will be chosen will derive in part from the parents' theory of development--a theory that is promoted by the society. The contemporary culture paints a relatively clear stereotype of the typical unsuccessful adolescent. He comes from a poor family with many children and a harrassed or neglectful mother who is unable to unwilling to give her infant consistent and devoted attention. That life sequence, which has some validity in fact, becomes transformed into a rather strict cause-effect principle: A mother's devoted and attentive care to her young infant is critical

for his future psychological development. Additionally, the baby is a source of fun in its own right and many parents find it easy and enjoyable to play with their young child and it is reasonable to conclude that those early interactions provide prophylaxis against future psychological trauma.

Let us be clear about the implications of this discussion. We are not suggesting that parents should stop caring, interacting, or enjoying their young children. They should do all those things. Nor do we suggest they should neglect or ignore their infants. The evidence suggests, however, that receipt of care by surrogate caretakers other than the parents during infancy may not influence the child's future psychological functioning in a serious way. Moreover, during the preschool and early school years it is likely that the critical dimension is the child's perception of his value in the eyes of his family--a conclusion that is likely to take precedence over the specific experiences of infancy. Further, the older child detects the contrast between his life and that of his peers and that recognition can lead him to judge himself privileged or abused. The attitudes of the parents--toward the child, toward themselves, and of their life space--are primary factors. This is really a restatement of the suggestion made by Caldwell in 1964 and Orlansky in 1949. On these bases one would not expect day care attendance alone to affect the child's development in a serious way if the parents generally had a positive attitude toward their children and the surrogate caretakers were nurturant, attentive and conscientious.

The Tremont Street Infant Project

The most extensive study of the effect of day care experience on infants was recently completed by Kagan, Kearsley and Zelazo. Since this study dealt with both working and middle class children from two ethnic groups and evaluated the children on a broad array of variables it seems useful to summarize the highlights of this study.

The sample consisted of 32 children, Chinese and Caucasian from both working and middle class families who attended an experimentally run day care center from between 3 1/2 and 5 1/2 months of age, when they were first enrolled, until 29 months of age when the program terminated. Each of these 32 experimental children was matched with a child of the same sex, class, and ethnicity who was being reared at home. Additionally we tested 35 additional children from both Chinese and Caucasian families who also were being reared at home. Thus there were 67 home reared children, 32 day care children, with 32 of the home children closely matched with those in day care.

The children in all groups were enrolled in the experiment when they were 3 1/2 to 5 1/2 months of age. The children in Group 1 were usually in residence at the day care center 5 days a week from 8:30 in the morning until about 4:00 in the afternoon. Each infant was assigned to a primary caretaker and in most cases the caretaker was of the same ethnicity as the child. A manual of procedures for interaction with the infant and toddler formed the basis for play between caretaker and infant. These proscribed interactions were administered when the infant was alert, biologically satisfied, and not playing alone happily. Typically, an infant experienced between one and two hours of this interaction each day.

The curriculum had a middle class American bias--it encouraged cognitive development, one-to-one affective interactions between adult caretaker and child, and tried to maximize the opportunity that each child would have many successful mastery experiences.

The low child to adult ratio, together with the caretaker's assumption that she was, in part, an educator, made this an unusual day care setting and not representative of typical infant day care in the United States.

The assessments

Each child was assessed by a research staff who were not involved in any aspect of caretaking. Moreover, the offices of the research staff were in William James Hall in Cambridge, several miles from the day care center. Infants were assessed at 3 1/2, 5 1/2, 7 1/2, 9 1/2, 11 1/2, 13 1/2, 20 and 29 months of age.

The children received four kinds of assessments: laboratory episodes in which visual and auditory events were presented and we coded the child's attentiveness and affective responsivity to the events, assessment of the child's attachment to his mother, assessment of the child's play with his mother and an unfamiliar peer, and finally, assessment of vocabulary, language skills, memory and perceptual analytic skills at 20 and 29 months. Thus the assessment battery attempted to cover the major facets of cognitive and social development during both infancy and early childhood. The results of the assessments revealed very little difference between the day care and home control children during either infancy or later childhood. There was no difference in attentiveness or affective responsivity to the laboratory episodes and the growth functions for attentiveness were similar for both groups. At 20 and 29 months the day care and home control children displayed similar patterns of social behavior with a peer and both showed a brief period of social apprehension that disappeared. The day care children were neither more social nor more aggressive than those reared at home. Both day care and home control children approached their mother when distressed or tired and the day care children did not prefer their day care teacher to their mother. Other measures of the attachment bond implied equivalently strong attachments to mother for both day care and home control children. Finally, the cognitive skills at 29 months were equivalent for both groups. The two groups performed similarly on tests of linguistic skills, memory for locations, perceptual analysis and the Bayley Developmental Scale.

Hence attendance at a day care center staffed by conscientious and nurturant adults during the first 2 1/2 years does not seem to sculpt a psychological profile very much different from the one created by total home rearing. This conclusion is based not only on our formal assessments but also on our informal observations of the children over the 2 1/2 year period. These data did not confirm several popular notions about early group care. Although it is reasonable to assume that daily encounter with other children during the first two years might speed up the maturation of the social interaction sequences usually seen in 3 and 4 year olds, our data did not provide dramatic support for that prediction. The 20 and 29 month olds were simply not very social and did not often initiate play with other children. Both cooperative and aggressive play occurred infrequently among both groups. There were as many shy children among the day care group as there were among the home controls. Indeed, on one occasion we satisfied our curiosity about a particular girl who was inordinately shy with a strange peer in our 20 month assessment by bringing an unfamiliar peer to the day care center. The girl retreated at once to her day care teacher, even though she was in her territory. The day care children were neither more cooperative nor more aggressive than home controls.

Some have argued that day care experience promotes an insecurity in children which makes them more prone to seek their

mother when frightened or bored. All the children were disposed to approach their mother when they became uncertain in the presence of the unfamiliar peer or as a result of the unprovoked movements of the adults during the 20 month attachment session. The separation anxiety situation revealed a remarkably similar growth function for both day care and home controls, verifying data from other studies.

Some investigators have suggested that multiple caretaking by adults other than the mother weakens or dilutes the child's emotional bond to his mother. The day care child had two primary caretakers in addition to the mother -- one caretaker from 3 1/2 to 13 months and a second caretaker from 13 to 29 months. In addition all were exposed to other adults who administered occasional care at the center. Nonetheless, day care and home control children were equally likely to choose the mother as the target for solace and attentive nurturance when they were bored, tired, or afraid. The day care child was no more likely to approach his or her primary caretaker from the center than was the home control child to approach a friend of the family during the 20 month attachment session.

The entire corpus of data supports the view that day care, when responsibly and conscientiously implemented, does not seem to have hidden psychological dangers. Since this conclusion flies in the face of much popular belief -- including a prior prejudice of one of the principal investigators -- it is both useful and natural to maintain a skeptical attitude toward this generalization.

One objection is to question the sensitivity of our methods of assessment. It is always a possibility that a scientist's methods are insufficiently valid indexes of his constructs. The history of psychology is littered with type II errors. Many investigators who found no class differences on the Bayley Scale under one year concluded that class had no effect on cognitive development during the first year of life. But when different methods were employed -- for example, fixation time to discrepant events or vocalization to samples of speech -- clear class differences emerged. The Bayley was not sensitive enough to detect them. It is, of course, impossible to assert that the day care and home control children are not psychologically different. It is the responsibility of the investigators who believe that early group care makes a difference to invest more sensitive methods to demonstrate the validity of that hypothesis. We will be among the first to accept that finding if the data so indicate.

But let us suppose that our methods are relatively sensitive and, indeed, there are trivial and nonenduring differences in cognitive, social, and affective development between our two main groups. How is that possible, considering the fact that the day care children spent as much time in the center as they did at home. An initial attempt at interpretation assumes that the psychological experiences at home have a priority -- they are more salient and more affectively charged than the experiences at the center. Let us consider some speculative arguments that might account for the differential salience of caretaking experience at home versus

the center. If we assume that the biological mother has been the primary caretaker at home for most of the children -- our informal observations are in accord with that assumption -- the question reduces to: Why does the mother's psychological impact on her child seem to be greater than that of the female caretaker in the day care environment?

Part of the answer to that question may lie with the greater unpredictability of the mother which leads her to become a more salient object in the infant's world.

A conscientious and nurturant caretaker in a group setting is keenly aware of the psychological diversity among the children in the setting as well as the differences in the values between each parent and herself. As a result, she is unlikely to hold rigid standards of behavior for each child regarding talkativeness, cooperativeness, cleanliness, aggression, quality of play, or the age when particular developmental milestones should appear. She is likely to be more relaxed about these standards than the parents because she is less profoundly identified with the children in her care. It is neither a source of deep pleasure if one of her children is slightly precocious in learning to drink from a cup nor a source of anxiety if a motorically retarded child spills his milk every day. This tolerant attitude toward diversity in growth patterns leads the caretaker to give each child considerable license to behave in accord with his temperamental disposition and relative level of maturity. As a result, with the exception of extremely destructive or regressed children, the

caretaker does not impose constraints on the children when they seem occupied and happy. As a result the average child does not generate serious uncertainties about the caretaker's actions when he is exploring his environment.

By contrast, the typical mother is identified and emotionally involved with her young child. She has a set of discrete standards for his behavior and she vigilantly watches for deviations from those standards. One mother may believe that any defiance of her requests is a sign of future rebelliousness and she quickly and firmly reacts to it with disapproval or punishment. Most mothers hold standards for cleanliness, potentially dangerous acts, aggression, talkativeness, time of walking, talking, and other developmental milestones. The mother diagnoses deviations between her child's developing profile and her idealized standards, and when those deviations are too large she intrudes into the child's life space and attempts to shape his behavior so that it is in closer conformity with her understanding of the appropriate growth curve. Each intrusion -- be it punishment, praise, or command -- punctuates the child's ongoing behavior and consciousness and creates a temporary node of uncertainty which alerts the child to the mother and to the action just issued. This speculative line of argument implies that the typical mother in our sample was a more distinctive source of uncertainty for the child than the surrogate caretakers in the center. The mother was less predictable than the caretaker; she was more difficult to understand. In the language of classic psycho-analytic theory,

the mother was more highly cathected than the caretaker. In the more modern language of information processing theory, the mother was a more salient event. In a special sense, a parent's behavior poses a more difficult discrimination problem for the child than that of the caretaker. As a result, the parent is a more affectively charged object. Of course, if a caretaker behaved like our caricature of a mother (that is, she held fixed standards for the behavior of the child and intruded when the child deviated) the caretaker would also become highly salient and affectively charged. But in a typical day care center -- and certainly in our center -- most caretakers did not behave in this manner.

It is interesting to note that a recent study of kibbutz-reared children, who spent over 20 hours of each day in an infant house with a metapelet, also revealed the salience of the mother over surrogate mother. The 12 to 15 month old children were more

likely to approach their mother than their metapelet when a female stranger was in the room with both caretakers, and were less apprehensive when they were with their mother and a stranger than when they were with the metapelet and the same stranger. It is unlikely that the amount of time a child spends with a caretaker is a critical variable. Rather, the nature of the psychological interaction is essential.

We do not know if these speculations have any validity. But these data, as well as those of studies reviewed earlier, suggest that children from intact and psychologically supporting families who experience surrogate care during infancy and early childhood, resemble home reared children from their own social and ethnic group to a greater degree than they do children of other ethnic and class backgrounds who are in the same extra-familial environment. The effects of the home appear to have a salience that is not easily altered by the group care context. The family has a mysterious power, which is perhaps one reason why it has been the basic and most stable social unit in this and other societies for so long a time.

Policy implications

The existing data on group care are not complete enough to permit firm statements about the critical characteristics of day care centers that influence aspects of psychological development. No investigation has systematically varied caretaker-child ratios, amount of space, number and quality of toys, or nature of curriculum and estimated the effects of variation on these dimensions. Hence any recommendations must come from experience with group care and wise guesses from available reports. Since these recommendations are likely to be distorted by the prejudices of the author who prepares them, they are to be interpreted with caution. Consensus among experts is probably the best safeguard against invalid conclusions.

The role of the Federal Government in regulating day care. The preceding discussion implies that if the ratio of children to caretakers is not large, the staff is conscientious and well supervised and there is some professional monitoring of the child's development, group care does not seem to have an important effect on the infant's development. Unfortunately, the characteristics of a day care center and its staff that can be monitored and regulated objectively by a governmental agency, like years of education, or number of toilet facilities, do not appear to be of crucial importance. The attributes that are of importance among caretakers include a fondness for children, prior experience in raising children, some knowledge of child development, and a tolerance for the views of others. These qualities are not easily

measured and therefore cannot be monitored effectively. Perhaps the best monitor of the quality of care is the family itself. The parents of the children in the center should be able to effect changes in the institution when they feel their child is developing anomalously. Additionally, government agencies might support inspection teams which evaluate the children and staff at particular centers to determine if the development of the children is within normal limits. The author of this report favors the idea of such a set of inspection teams over the writing of excessively detailed regulations for the establishment of centers.

Although it is difficult to determine a governmental agency's role in regulating the quality of care, the functions that can and should be regulated include:

1. The ratio of staff to children. During the first three years of life, it is believed that a caretaker should not be responsible for more than three infants. Our own day care project found that responsibility for more than three infants placed a serious psychological burden on the individual caretaker. Moreover, in institutional environments where the ratio is much greater, one finds temporary retardation in cognitive and affective development. Dr. Mary Peaslee of Florida Southern College has informed the writer of a study she has completed in which the ratio of children to caretakers in the centers she evaluated was over 12 to 1. The children in this study were retarded on many aspects of cognitive development. Moreover, studies of children raised in poor institutional environments where one caretaker was

responsible for large numbers of children (often 8 to 20) find retardation in cognitive, affective and social development.

2. Space. It is extremely difficult to estimate the minimal amount of space each infant should have in a group care center. In addition to the space for sleeping, bathing and toileting, it is estimated that an infant and toddler should have at least 100 square feet for play and opportunities to exercise maturing motor and psychological competences. This does not mean that all centers with 30 infants must have 3000 square feet, but rather that each child have adequate space to locomote, and some wall of space around the child so that he or she can play alone without being continually intruded upon by other children. Hence a center with 30 infants should probably have a minimum of 2000-3000 square feet of space. But this is a guess based on experience and not a conclusion based on fact. The author, a member of a visiting team to China, saw infant care centers with far less than this amount of space. Although the infants in these contexts seemed a little less attentive and alert than American infants, the 4 and 5 year old children in the same complex seemed developmentally mature.

3. Age of admission. It is believed that the child should not be admitted to the day care center before four weeks of age. During the opening month, the home environment may provide better protection against contagious infection, and it seems reasonable to assume that the mother would want to be with the very young infant during the early part of his postnatal adjustment. Even the People's Republic of China, which encourages early group care

for infants, allows the mother an initial two months with her infant at home.

Some investigators have reported that during the period 7 to 18 months the child is especially vulnerable to being separated from the familiarity of the home. Our limited experience in our experimental day care center confirms this view. We found in a few cases that when children were admitted after 7 months they showed anxiety and difficulty adjusting. Moreover, research indicates that around 7 to 8 months of age the human infant enters a new stage of cognitive functioning in which he is potentially vulnerable to fear following exposure to unfamiliar events, people, or situations. This period of "apprehension" typically lasts until 1 1/2 to 2 years of age (Kagan, 1976). For example, separation fear is most frequent from 9 to 15 months of age in children from many different cultural settings. Hence it is suggested that mothers be encouraged to enroll the infant in the center between one and seven months or after 18 months. Parents should be discouraged from enrolling their child in day care from the middle of the first to the middle of the second year.

4. Characteristics of personnel. Although center personnel do not have to be college graduates or have undergone extensive professional training, training is obviously of some value. It is suggested that the age, personality and prior experience of the staff are more important than formal training. It is suggested that a woman between 25 and 50 years of age, expecially those who have had children, are best qualified for infant care. This

statement does not imply that younger or older women are not able to perform their duties effectively nor that men would be inappropriate. We only mean to imply that mothers between 25 and 50 are likely to be the best caretakers. Further, it is suggested that the staff should be represented by adults who come from the same ethnic and social class group of the parents who are using the center. Subcultural groups in the United States differ in their values and some mothers feel reassured when some members of the staff represent their values and worries. We believe that parental involvement in the center should be encouraged because the parents should not develop the belief that the responsibility for the child's development is out of their control. Parents must continue to believe that the direction of their child's development is their primary responsibility and not that of the staff of the center. Parental involvement, whether through regular meetings with staff, volunteer work at the center, or representation on the board of directors of the center, is to be encouraged.

5. Risks. There are three major risks associated with day care for infants. The first is physical health. There is no question that colds and mild infections are more frequent in group care settings than they are in the home because of the constant contact with children who are temporarily ill. The child who is ill should be placed in a special room or area away from the rest of the children. In cases of epidemic, the center may have to be closed. It is useful if a nurse or medical paraprofessional is available to care for mild illness and for routine mishaps. The

center should have a reliable relation with a hospital or physician so that emergencies can be dealt with at once.

A second risk associated with day care is that the child who is temporarily quiet and withdrawn can become excessively isolated. This can happen in a group care center where staff are busy. The quiet, apathetic child who bothers no one can easily be forgotten. A third risk concerns the course of cognitive development, especially language development. Language competence is one of the most important skills in our society and the day care environment should self consciously encourage a one-to-one interaction between staff and the young child so that language development is enhanced. Available research suggests that day care or institutional environments that do not encourage language development and contain caretakers who do not engage in conversations with the children retard the growth of verbal skills in the child. Additionally, day care environments for infants that restrict the child to cribs or playpens for most of the day and do not allow the toddler to practice maturing competences also retard the development of problem solving skills (Peaslee, 1976). Thus there are real dangers associated with poor quality day care that are not to be minimized. The day care center in which the infant has reasonable attention from a conscientious caretaker, opportunity for active and playful interaction with an adult, stimulation of language, and opportunities for play seem to place the child at minimal risk.

Methods of regulation. Since the critical qualities of the center are not easily made objective, the regulatory unit should

be politically close to the center. Awarding regulatory power to the municipal educational health bureau is probably the best alternative. In rural areas or in regions where this is not feasible, regulatory control should lie with the county or state. It is suggested that it is unwise for a Federal agency to monitor local day care centers, even centers funded by the Federal government, because such a decision would force an unnatural objectification of the qualities that are not critical to the effective management of the day care center.

The need for day care. Woolsey (1976) has reviewed the studies attempting to determine if the availability or lack of availability of day care has played any role in a woman's decision to gain employment and concluded that lack of day care is not often cited as a reason for not working. Moreover, most women prefer to hire caretakers to come to their homes to stay with the young child rather than send the child to the center. Between 1965 and 1971 there was an increase in the percent of families with children under 6 years of age who used care in their own homes. However, use of care in another person's home decreased from 34 percent to 17 percent. Day care increased only a little with a greater increase among nonwhites than among whites. Hence day care is still not popular in the United States and there is no sign that it is becoming popular, at least at the present time. The reason seems to be both cost and some apprehension about the child being taken away from the familiarity of his home.

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